

Barnsley Assistive Technology Team

**Review of AAC stroke
cases to identify common
practice and consider
outcomes**

Zoë Clarke & Marcus Friday

Andrea Kirton, Simon Judge, Vicky Johnson

Stroke and AAC

- Attended 'Training Communication Partners of Adults who use AAC: Finding the evidence' presentation at CM 2013 which described Critically Appraising Papers
- As a team we have experience in practice but had been keen to consider the evidence for use of VOCAs with stroke survivors and thought critical appraisal route would be appropriate
- Anecdotally we feel that the uptake of VOCAs by Stroke Survivors is limited

Background

- AT Team meet weekly to discuss referrals and patients seen
- Identified number of referrals relating to the use of VOCAs with stroke survivors
- Anecdotally limited success with introduction of VOCA

Plan

- Decision to produce case studies of recently seen patients (stroke survivors)
- Review case studies as a team
- Draw conclusions and consider future work, including developing a question for critical appraisal
- Consider more broadly our general process from referral to assessment

Case Studies

- Case study template developed
- AT Team wrote up to three case studies each of most recent stroke cases they had been involved with

Case Studies

- Patient details
- Referral information
- Initial assessment/s
- Equipment trialled
- Next steps/further trials/plan
- Key things highlighted by the case

Short Case Study

The idea of this is to put together short case studies to enable us to compare referral details, approaches, outcomes, direct literature searches, direct research etc. The bullet points are for guidance, if there is information that doesn't fit within a given bullet point please still add it or add a bullet point and add it. The aim would be for them to be less than two pages long however obviously ensure information is captured.

Patient number:

Age:

Gender:

Diagnosis:

Referral information:

- Reason for referral
- Previous things tried
- How difficulties described

Initial Assessment/s:

- Further information gained
- Equipment taken
- Ideas explored
- Goals/motivations
- Next steps agreed
 - Including decision making process which lead to next steps
 - Our role in the next steps
 - Other therapist roles in the next steps
 - Other input available e.g. therapy assistants

Equipment Trialled (if applicable):

- Equipment
- Set up
- Outcomes

Next steps/further trials/plan

•

Key things highlighted by this case e.g. impact of good support, impact of previous experiences etc.

•

Example Case Study

■ Referral Information:

- CA had a stroke on 10/03/13. He received inpatient rehabilitation and was transferred back to the Stroke Rehab unit in June 2013.
Has a R sided hemiplegia. Is independently using an electric wheelchair around the ward.
Has moderate receptive and expressive dysphasia and dyspraxia.
Is keen and motivated to communicate. He was previously very fit and independent so is frustrated by his limitations at present.
- Previous things tried
 - Has demonstrated potential to use a basic communication book.
Have started trialling basic apps via an iPad which CA has enjoyed.
- How difficulties described
 - Has moderate receptive and expressive dysphasia and dyspraxia.

Example Case Study

■ Initial Assessment/s

- Further information gained
 - We were given communication summary by SLT. This detailed his comprehension and expression.
 - Reading comprehension: reliable at short sentence level.
 - Auditory comprehension: reliable at sentence level (comprehensive aphasia test 12/16). Some difficulties with reversible sentences.
 - Semantics appear reasonably intact.
 - Dyspraxia and dysphasia.
 - Limited intelligible spoken output. Occasional automatic words and phrases.
 - Writing: spelling errors evident at single word level. Perseveration and jargon evident in writing.
 - Test of Aided Communication Symbol Performance administered in Malta – found he could manage an AAC device having a total of 25 cells (5x5).

Example Case Study

- We discussed the communication book, however his daughter reported that he had used it a lot in Malta but had not really used it since being home. We asked to look at it but it was at his daughter's house.
- The patient was very expressive in his gestures and facial expression and his verbal output had the flow of speech however it was very difficult to pick out any intelligible words. His daughter seemed to pick up more from this and we wondered if some of the output was intelligible but Maltese.
- His daughter reported that he had demonstrated good motivation towards learning new things and had learnt how to use his new armchair quickly.
- The patient had tried an app on the iPad with the SLT however he indicated that he had found this complicated and the SLT agreed with this.
- We discussed that the patient is good at drawing and that it would be good for the carers to encourage him to draw something if he is struggling to communicate.

Example Case Study

- **Equipment taken**
 - iPad with various apps, including Grid Player with both symbols and photographs.
 - Talara and example overlays.
 - Neither of these had been personalised but had been taken set up appropriate for assessment.
- **Ideas explored**
 - We discussed that it would be possible to simplify things on something like an iPad or that there were alternatives to more computer based communication aids.
 - We showed the Talara32 which the patient seemed interested in. We initially tried it with an 8 place overlay and then increased the number of cells.
 - The patient was able to access the 32 cell overlay however needed a number of clues to help him find what we had asked for on this overlay. His daughter indicated she was planning to take him for an eye test.
 - Having shown an interest in the Talara32 we discussed possible messages to put onto the device. We initially discussed potentially having topic cues in order to minimise the cognitive load of looking at a large number of cells but to help support his communication. We felt at this stage he would find navigating a large number of cells challenging.

Example Case Study

■ **Goals/motivations**

- The patient highlighted throughout the appointment his motivation to be able to walk around his house again. He has been told that he is not able to do this at the moment and this is causing him some frustration.
- His daughter highlighted that they are concerned about his communication with Central Call and with his carers who call four times a day. They had devised a system with Central Call whereby if he pressed his button he could indicate if he needs help by doing a big tap on a surface near to him. We discussed having messages on the communication aid which could help with communication with Central Call.
- With the carers his daughter's main concern was about him needing the toilet. We agreed that putting a message on about needing the toilet would be useful. We agreed that obviously this wouldn't help when nobody is present but that he would be able to tell the carers clearly when they arrived if that was what he wanted.

Example Case Study

- **Next steps agreed**
 - We agreed to set up the Talara32 for trial. We agreed to add the following phrases:
 - I need the toilet
 - yes
 - no
 - I need help
 - I want to have a shave
 - I want to brush my teeth
 - I want to do my exercises
 - Can I draw you a picture to show what I mean
 - Our role in the next steps
 - To set up the Talara32
 - Other therapist roles in the next steps
 - SLT was visiting once a week so we agreed we would visit with them to issue the Talara32.

Example Case Study

- **Equipment Trialled (if applicable):**
- Equipment
 - Talara32 set up with 8 messages.
- Set up
 - 8 recorded messages
 - We demonstrated the Talara32 to the patient and he was able to access the phrases well. We had raised concerns about ensuring that he was reliable with yes and no if we were intending him to use this to communicate with Central Call and the SLT asked him some questions to gauge this. The patient was reliable with this and would quickly correct if he got it wrong.
 - The patient seemed pleased with the device and drew a picture of a bigger grid indicating that it could be expanded to have more words.

Example Case Study

■ Outcomes

- When reviewed SLT reported that the yes and no phrases on the Talara had been useful, but that the phrases for the carers had been redundant while he was in the care home.
- SLT had been working with C on drawing pictures to express what he would like to say.
- At one point in the appointment, patient was trying to tell us about something to do with the desk in his room. He drew a desk, and wrote "a box of pastels" but we were not able to ask the right questions to find out exactly what he meant. We suggested that it might be best to create a communication book, with vocabulary available that he would be able to use in conversations.
- It was thought that a book would be easier to navigate than a high tech device, as it is a more 'concrete' entity. If this was successful, then it would be possible to put the same vocabulary onto a high tech device to provide voice output.
- SLT was happy to create a communication book, and she also said she would ask the staff to ensure that he has paper and pencil so that he can draw what he is trying to say if it is not available in the book.
- Trial ended.

Example Case Study

- **Key things highlighted by this case e.g. impact of good support, impact of previous experiences etc.**
 - When transferred to a more structured environment important phrases at home became redundant.
 - Highlighted importance of trying to establish good low tech methods prior to use of a higher tech aid.
 - Motivation was much more around wanting to independently mobilise again than speech.
 - Difficult to establish how much insight patient had into how unintelligible he was.

Case Study Review

- Met as a team and each presented their case studies
- Followed by discussion of the information generated from case studies

- 11 case studies
 - 5 female, 6 male
 - Age 31 – 79 Median 59
 - Referrals from 2009 – 2013

How Difficulties Described

- Description of verbal output - 11
- Description of comprehension - 7
- Description of cognition – 3
- Other e.g. sensory, psychological, motivation - 4
- Description of writing - 5
- Description of access - 4
- Possible solutions eg suggestion of equipment - 3

Previous Things Tried

- Yes - 9 No - 2
- Examples
 - Writing
 - Phrase cards
 - Alphabet board
 - iPad – Predictable, Proloquo2Go
 - FuturePad

Initial Assessment/s

- All gained additional information
 - Further understanding of expressive and receptive language
 - Current strategies
 - Further detail of current therapy
 - Sensory
 - Access
 - Motivations
 - Observation of person trying communication aid
 - Environment/social situation
- In some cases suggested completion of communication diary

Equipment Taken

- Novachat
- Predictable on Android
- Tobii S32
- Motiontablet with Grid2
- iPad
- iPad mini
- iPhone
- Laptop

- VOCA Adopters
 - Social motivation – meeting sisters, pub quiz
 - Setting tasks for person to try e.g. announcing themselves at appointment
- VOCA Non-adopters
 - Social motivation (but then conscious of aid)
 - Goals not defined clearly
 - Eager to use aid to help practice words/phrases

- All trialled at least 1 device
- Equipment
 - iPad - 4
 - 3 with Predictable, ClaroCom Pro, Verbally+
 - 1 with Proloquo2Go
 - S32
 - Techscan
 - Servus with MindExpress
 - Viliv X70 with Grid2 – Symbol Talker A
 - Tellus Smart then iPhone
 - Viliv S5 with Grid2 – Adapted Beeline
 - Talara 32

- VOCA Adopters
 - Lots of evidence of use
 - Enthusiastic supportive carers/family
 - Motivated by initial goal/aim
- VOCA Non-adopters
 - Reports of main use for practicing words/phrases
 - Speed of communication including getting aid out and ready to use

Outcomes

- Recommendation for VOCA – 2
- Trial device removed and no VOCA recommended – 8 (3 utilising low-tech strategy resulting from assessment)
- Still trialling – 1 (later trial device removed)

VOCA Outcomes

- Supportive partner/environment
- SLT having clear picture of features client required
- Valid to trial higher tech communication aids but not forget low tech as ultimately that may remain appropriate option
- Motivation
- Soon post-stroke so no social isolation
- No significant motor or literacy difficulties
- Being creative about things which could support communication – social media, use of camera on phone etc.

Non-VOCA Outcomes

- Importance of having appropriate vocabulary on device – but this wasn't always easy to determine
- Could be beneficial to ensure low tech system has been used prior to referral to establish vocabulary required and purpose of communication aid
- Good support does not necessarily equal success
- Perception of using aid in public/functionally
- Managing expectations/being clear about limitations of an aid
- Aid not being as effective as their communication partner

Non-VOCA Outcomes

- It is a challenge to meet communication break down where novel utterances are required.
- Rehabilitation vs functional support of communication
- Social isolation
- Structured environment
- Insight into intelligibility
- Acceptance of communication situation
- Non-completion of communication diary

Overall Conclusion of Initial Work

- Very useful process
- Considering stroke as a group not refined enough, need to consider particular affect of stroke e.g. dysphasia, dyspraxia

Further Analysis

- Following initial work, team met to consider neurology in terms of speech and the effects of stroke in more detail
- Looked to classify the cases further (within the confines of the information we had and our knowledge)

Further Analysis

Predominant Condition	Number	Outcome
Broca's Aphasia	5	3 No VOCA recommended/2 low-tech
Wernicke's Aphasia	1	No VOCA recommended
Global Aphasia	2	No VOCA recommended
Dyspraxia	2	VOCA recommended
Dysarthria	1	Low-tech

Further Analysis

- Observations
 - Where the predominant condition was dyspraxia rather than aphasia there was resultant adoption of a VOCA
 - Majority of people in our group using a VOCA or low-tech solution were women

Re-referrals

- Two re-referrals of cases since initial work was undertaken
- Better or potentially better outcomes this time

Case S

- S was initially assessed 8 months after his stroke
- He was still undergoing language therapy
- Comprehension of single words
- Good functional communication through non-verbal means
 - Largely through gesture
 - Yes, no, bye

Case S

- Initial assessment
 - S32 and iPad taken
 - Discussed device which could be set up with phrases
 - Discussed using photos to aid selection of phrases
- Goal
 - To help with conversations at the golf club and pub

Case S

- Next steps
 - Set up device with phrases/words
 - Decided static overlay could be less confusing and not requiring many phrases at this stage
 - Agreed we would put therapy words on device and phrases such as his bar order
- Trial
 - Tobii S32 with patient's voice
 - 16 and 32 overlay, started with 16
 - Photos and some symbols with key word

- Outcomes
 - Tended to practice words within the home but didn't want to take it out of the house
 - Agreement that words/phrases trialled were not proving useful but difficult to establish what would be
 - Felt therapy software was better for practicing words
 - SLT visited to discuss the barriers to using it functionally however at this stage patient decided he did not want to pursue a communication aid and trial was withdrawn

- Re-referral
 - Plan to discharge S from Speech Therapy
 - Request for re-referral
 - AT Team agreed to take on referral but that after previous work we would want to carefully consider with S what he wanted from a communication aid
 - Undertook Means, Reasons and Opportunities Assessment

Means, Reasons and Opportunities

(Della Money and Sue Thurman, 1994)

- Without the **means** of communication you cannot express yourself
- Without **reasons** for communication, there is no point or need to communicate
- Without the **opportunities**, there cannot be any communication.

Means, Reasons and Opportunities

- The MEANS (how we communicate)
 - The REASONS (why we communicate)
 - The OPPORTUNITIES (where, when and with whom we communicate).
-
- Functional Communication requires equal interaction between MEANS, REASONS and OPPORTUNITIES.

Means, Reasons and Opportunities

Reasons for Communicating		
Make Choices	Express Personal Needs	Make Requests
Ask Questions	Ask for Information	Answer Questions
Give Information	Express Opinions	Make Comment
Agree	Disagree	Give an Order
Tell Story	Make Joke	Ask for Help
Make Friends	Develop Relationships	Learn
Teach / Instruct	Chat	Gossip
Express Emotion	Confident	Not Confident

Communication Environments and Situations		
Home	School / College	Work
Day Centre	Residential Care	Hospital Inpatient
Hospital Outpatient	GP	Other Medical
Social Club	Sports	Restaurant
Pub	Holiday	Shopping
Public Transport	Outdoor Activity	Telephone
Close Family	Extended Family	Friends
One to One	Group	Public Speaking

Topics		
Personal Care	Food	Drink
Clothes	Health	Medicine
Hobbies	Sports	Interests
Pets / Animals	Family	Friends
Places	People	Jokes
School	Work	Weather

Means, Reasons and Opportunities

- Means:
 - Some speech, often to ask questions e.g. "can I have a sandwich", and yes and no, and to request help
 - Gesture
 - Facial expression
 - Small amount of writing and drawing
- Reasons:
 - Conversation, chatting, gossip
 - Make jokes
 - Make choices
- Opportunities:
 - Pub and restaurants
 - Meeting friends
 - Sport

Case S

- Trial of iPad with personalised SymbolTalkerA
 - Poker
 - Football



- Outcomes
 - Using iPad in different situations
 - Poker group
 - Restaurants
 - On holiday
 - Motivated to use iPad
 - Family and friends supportive
 - Windows Tablet recommended (to enable onboard editing)

- Potential reasons for difference in outcome
 - Different stage of rehab (Speech Therapy ending)
 - Having trialled S32 better knowledge of what he wanted, what he would use and vocabulary

Future Practice

- Potential to refine requested referral information
- Ensuring establishment of low-tech or good reason why not able to establish
- Considering how to better manage expectations of referral to AT Team
- Think about how to better encourage functional use not just practicing therapy words
- Resources to enable therapists or assistants to undertake role play/practice scenarios
- Thinking about better ways to facilitate completion of communication diaries

Research Questions

- One of the aims was to establish a question for critical appraisal
- Currently have not established question but feel that we now have the basis on which to do this

Discussion Points

- How does this compare with others experience?
- Thoughts on communication diaries?
- Thoughts on ways to improve outcomes?

Contact and Information

- Zoe Clarke: z.clarke@nhs.net
- Marcus Friday: marcus.friday@nhs.net
- <http://www.barnsleyhospital.nhs.uk/services/assistive-technology/>
- Twitter: @BarnsleyAT